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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/283,585	04/01/1999	LARS ARKNAES-PEDERSEN	103176	1234
25944	7590	12/23/2003		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320				
			EXAMINER LEE, PING	
			ART UNIT 2644	PAPER NUMBER

DATE MAILED: 12/23/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/283,585

Applicant(s)

ARKNAES-PEDERSEN, LARS

Examiner

Ping Lee

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-18 and 21-29 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 7-9, 15-18, 21-23 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Don Michael et al (US 5,971,936).

Regarding claims 1, 4, 15, 18 and 29, Don Michael et al (hereafter Don Michael) disclose a method of and an apparatus for processing an auscultation signal comprising at least one input transducer (although not clearly shown in Fig. 3, it is inherently included to produce "HEARTBEAT SOUND PATTERN SIGNAL"), at least one output transducer (e.g. 50), and a signal processing unit (28,30,36,32) which establishes each signal segment such that the duration of time of substantially all of the signal segments is less than a limit of 40 ms (each segment as shown in Fig. 2 is less than 50 ms). At least one signal segment is repeated at least once in the output signal (abstract).

Regarding claims 2, 3, 7, 16, 17 and 21, Don Michael shows the iteratively filtering ("1st pass". "2nd pass").

Regarding claims 8 and 22, Don Michael shows the coherent signal has at least three zero-crossings (a single heartbeat has least three zero-crossings as shown in Fig. 2) and the coherent signal is being repeated at least once (col. 11, lines 1-8).

Regarding claims 9 and 23, Don Michael shows dividing the signal segments in zero crossings (col. 4, lines 11-12).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 8-15, 18, and 22-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Katz (US 4,528,689).

Regarding claims 1, 4, 15, 18 and 29, Katz disclose a method of and an apparatus for processing an auscultation signal comprising at least one input transducer (120), at least one output transducer (116), and a signal processing unit (the rest of the elements in Fig. 6) which establishes each signal segment such that the duration of time of substantially all of the signal segments is less than a limit of 40 ms (each segment represented by a sampled signal sampled at 2 kHz; col. 7, line 58). At least one signal segment is repeated at least once in the output signal (Fig. 8).

Regarding claims 8 and 22, Katz shows the coherent signal has at least three zero-crossings (Fig. 8) and the coherent signal is being repeated at least once.

Regarding claims 9 and 23, Katz shows dividing the signal segments in zero crossings (132).

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Regarding claim 10, 11, 24 and 25, Katz shows the window function (col. 8, lines 24-52) and the neighboring signal segments being level-compensated.

Regarding claims 12, 13, 26 and 27, Katz shows the reverse and the mirror (Fig. 8).

Regarding claims 14 and 28, Katz shows the high-pass filter (126).

Allowable Subject Matter

5. Claims 5, 6, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 703-305-4865. The examiner can normally be reached on Monday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Ping Lee
Primary Examiner
Art Unit 2644

pwl 
December 12, 2003